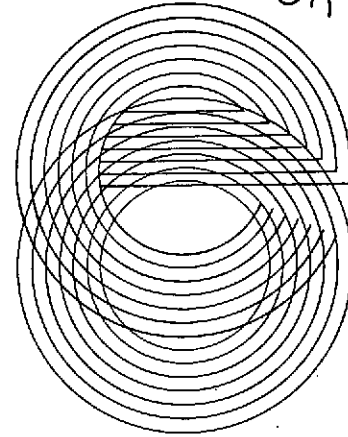


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EVALUATION OF THE SUITABILITY OF SKYLAB DATA  
FOR THE PURPOSE OF PETROLEUM EXPLORATION



E7.4-10331

CR-136842

EREP Investigation No. 495

Period Covered: October-December, 1973

Contract Number: NAS 9-13297

Principal Investigations Management Office  
Lyndon B. Johnson Space Center

Technical Monitor: Martin L. Miller

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Quarterly Report

E74-10331) EVALUATION OF THE SUITABILITY  
OF SKYLAB DATA FOR THE PURPOSE OF  
PETROLEUM EXPLORATION Quarterly Report,  
Oct. - Dec. (Eason Oil Co., Oklahoma  
City, Okla.) 4 p HC \$4.00 CSCL 08G

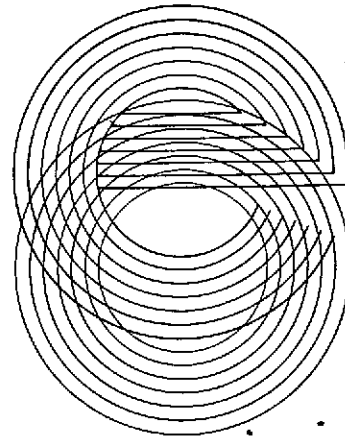
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Gentlemen:

This letter is a Quarterly Report for the period October-December, 1973 on the Eason Oil Company SKYLAB Experiment, EREP Investigation No. 495, "Evaluation of the Suitability of Skylab Data for the Purposes of Petroleum Exploration," Dr. Robert J. Collins, Principal Investigator.

## Current Status

To date, we have received a limited amount of SKYLAB (SL) data, including:

### SL-2

S190-A 4 bands of black-and-white, as well as color and color infrared imagery. Eight frames are less than 50% cloud-covered.

S192 Sample chips (channels 2, 7 and 11)

S193 Tapes

### SL-3

S190-B 70mm black-and-white and color 5-inch color

S193 Tapes

Unfortunately, much of the area was cloud-covered during both SL overpasses. We have not received any S190-B imagery.

We have also received 8 flight lines of black-and-white multiband photography, color, and color infrared imagery acquired by the NASA RB 57 over the Anadarko Basin test site. This imagery is of high quality and will provide an excellent bridge between the ground and SKYLAB imagery.

We have begun examination of the aircraft-acquired imagery and have examined the SL imagery and requested appropriate bands, formats and scales from JSC. On preliminary examination, the SL photography appears to be excellent in the cloud-free areas except for the S190-A black-and-white infrared imagery, which appears to have lower resolution and considerable graininess. The S192 scanner imagery appears to have considerable noise, which may be removable with digital preprocessing. We feel that the SL imagery and data will be sufficient for our purposes, particularly when we get some cloud-free coverage.

We have completed our ERTS experiment and have submitted a draft final report. The results of this experiment constitute one data set with which the SL imagery will be compared.

All equipment for working with the SL imagery is on hand and the basic computer programs are written. We are awaiting imagery to begin concentrated analysis.

Accomplishments Expected During the Coming Quarter


We will prepare and submit a work plan with milestones during the next quarter. When additional imagery arrives, we will complete our preliminary analysis to determine what bands and formats are most useful for extracting particular types of information.

A compilation of known structural features of petroleum exploration interest at a scale of 1:500,000 is underway. The features included in the compilation are derived from surface and subsurface maps, reports, and geophysical information. The compilation will act as a comparison standard for analysis of the SKYLAB data. We plan to complete the compilation during the coming reporting period.

Summary Outlook

Data and imagery have arrived approximately 4 months later than we originally anticipated. This, coupled with the spectacular length of the SL-4 mission, may necessitate our requesting additional time for our experiment. This situation will be evaluated as work progresses.

Respectfully submitted,

  
Robert J. Collins  
President